

REMARKS

The Office Action dated January 10, 2008 has been received and noted. The following remarks are being submitted as a full and complete response thereto. Authorization is granted to charge counsel's Deposit Account No. 01-2300, referencing **Attorney Docket No. 030687-00001**, for any additional fees necessary for entry of this Response. Reconsideration of this application is respectfully requested in view of the following remarks.

Independent claims 1, 16 and 21 and dependent claims 2-6, 9, 10, 15, 17-20 and 22-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Noguchi et al. (US Patent No. 4,689,056, hereinafter "Noguchi") in view of Varga (US Patent No. 4,771,361, hereinafter "Varga"). Dependent claims 7, 8, 27 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Noguchi, "as modified" by Varga and further in view of Lee (US Patent No. 4,789,801, hereinafter "Lee"). Dependent claims 11-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Noguchi "as modified by" Varga and in further view of either JP 56-78645A reference or JP 11-47636A reference. Dependent claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Noguchi, "as modified" by Varga and further in view of Rees (US Patent No. 6,254,823, hereinafter "Rees"). Dependent claim 32 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Noguchi, "as modified" by Varga and further in view of Krause (US No. 6,056,808, hereinafter "Krause"). Dependent claim 33 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Noguchi, "as modified" by Varga and further in view of Shoji (US Patent No. 6,508,982, hereinafter "Shoji"). Independent claims 1, 16 and 21 and dependent claims 2, 3, 8, 9, 11-15, 17, 20, 22-23, 25, 28 and 31 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over

claims 1-3 and 8-12 of U.S. Patent No. 6,544,485. The above rejections are respectfully traversed and reconsideration is requested.

Particularly with respect to independent claims 1, 16 and 21, it is submitted that neither Noguchi nor Varga or the alleged combination thereof discloses or suggests the apparatuses for conditioning air or the electro-kinetic system, as respectively claimed. More particularly, independent claim 1 recites, in part, a second electrode array including "inner and outer generally tubular electrodes electrically connected to one another, with the inner electrode located at least partially within the outer electrode." Independent claims 16 and 21 recite, in part, second electrode arrays including "inner and outer generally tubular electrodes electrically connected to one another, with the inner electrode located substantially within the outer electrode." Noguchi and Varga, either considered independently or in alleged combination, do not disclose or suggest the apparatuses or system, as claimed.

Rather Noguchi discloses an air cleaner using an ionized air flow (Figs. 7 and 8 and column 6, lines 4-10) that includes discharge electrodes 12 and counter electrodes 31 that are "parallel to the ionic wind" (column 6, line 14). Noguchi specifically discloses the counter electrodes 31 as "plate electrodes" in column 6, line 61 and "first parallel plate electrodes" in column 3, lines 37-38. Further, Noguchi illustrates the counter electrodes 31 in Figs. 1-3, 5-8 and 10, as planar, parallel electrodes. There are no other illustrations of counter electrodes in Noguchi and each of the embodiments illustrated in the figures shows planar electrodes.

Although the Examiner points to column 9, lines 4-7 of Noguchi as disclosing that the counter electrodes 31 are "not limited to plate electrodes, but can be corrugated electrodes or concentric electrodes," such does not suggest or indeed disclose that the counter electrodes of Noguchi can be other than planar, parallel electrodes. Nor is there any illustration or explanation

of what is meant by “concentric” in Noguchi. Accordingly, the Examiner appears to rely on this suggestion alone in order to support the argument that Noguchi discloses the claimed second electrode array of the claimed apparatuses and system, despite the fact that the Office Action is silent on the claimed features of the second electrode array.

Additionally with respect to the claimed second electrode array, Noguchi does not mention the claimed language “tubular” in its specification nor does Noguchi even suggest that the counter electrodes 31 may have a tube-like structure. Accordingly, Noguchi does not disclose or suggest the second electrode array, as claimed. Furthermore, Noguchi does not disclose or suggest the claimed second electrode array including an inner electrode located at least partially or substantially within an outer electrode. The disclosure in column 9, lines 4-7 of Noguchi also does not suggest such an arrangement. Accordingly, Noguchi does not disclose or otherwise suggest a second electrode array including inner and outer generally tubular electrodes electrically connected to one another, with the inner electrode located at least partially or substantially within the outer electrode, as claimed in independent claims 1, 16 and 21.

Nor does Varga cure the deficiencies of Noguchi with respect to Noguchi’s failure to disclose a second electrode array including “inner and outer generally tubular electrodes electrically connected to one another” with the inner electrode located at least partially or substantially within the outer electrode. Rather Varga discloses an electrode arrangement for corona discharge that includes field electrodes 7 “designed as tubes” (column 4, lines 52-53). In Figs. 3, 6 and 7, Varga also discloses embodiments in which there are multiple field electrodes.

However, Varga does not disclose or otherwise suggest that each of the field electrodes 7 constitutes an electrode array, much less that each of the field electrodes is an array including generally tubular electrodes such that one of the tubular electrodes is at least partially or

substantially within the other. Rather, as shown in Figs. 3 and 6, the field electrodes 6 are each monolithic components that do not include inner and outer electrodes. There is no mention in Varga of any interior structure or multiple components in the field electrodes 7, nor is there any mention of an interior structure inside any other type of electrode disclosed in Varga. Although Figs. 3 and 6 do show an embodiment in which there are multiple field electrodes 7, even if the multiple field electrodes 7 of Figs. 3 and 6 could be considered together as a single electrode array, they still would not provide the structure of the second electrode array claimed in independent claims 1, 16 and 21. Additionally, the field electrodes 7 of Figs. 3 and 6 are distributed along the center line 3 and do not overlap with or lie within one another. In fact, Varga discloses this arrangement of Fig. 6 in column 5, lines 56-57 as field electrodes being “successively fastened on respective insulating mountings.” In other words, the “successively fastened” electrodes are mounted on separate components and spaced apart from each other, as shown in Fig. 6. They do not lie, even partially or substantially within one another. Therefore, even if the multiple electrodes 7 shown in Figs. 3 and 6 could be considered a second electrode array, it is respectfully submitted that they do not disclose or suggest the claimed features of the second array of independent claims 1, 16 and 21.

Independent claims 1, 16 and 21 also recite, in part, “a first electrode array” and that the “first electrode array includes a generally tubular electrode” and “wherein the first electrode array is located closer to the input port than is the second input array.” It is respectfully submitted that Noguchi and Varga, either considered independently or in alleged combination, fail to disclose or suggest the combination of features that includes the first electrode array, as claimed.

As the Examiner states, Noguchi does not disclose that a “first electrode array includes a tubular electrode” and relies on Varga as disclosing “an electrode arrangement for corona discharge for use in apparatus for purification of air the limitation of a tubular corona discharge electrode.” However, the electrode arrangement for corona discharge of Varga does not include a first electrode array including a generally tubular electrode, as claimed in independent claims 1, 16 and 21. Rather, Varga discloses only a single tubular discharge electrode, i.e., the annular electrode 4 of Fig 2. Even if the multiple annular electrodes 4 of Fig. 3 and 6 could be considered together as a single electrode array, they still would not provide the structure of the first electrode array claimed in independent claims 1, 16 and 21. Rather the annular electrodes 4 of Figs. 3 and 6 are distributed along the center line 3 and separated from one another by field electrodes, as described in column 5, lines 53-56. Therefore, it would be impossible to place even this electrode arrangement of Varga within the air cleaner of Noguchi such that the entire array of field electrodes is “located closer to the output port” than is each of the annular electrodes 4, as claimed in independent claims 1, 16 and 21. Even if the multiple electrodes 7 shown in Figs. 3 and 6 could be considered a first electrode array, they would still be unable to provide the features of the first electrode array, as claimed.

For at least these reasons, Noguchi and Varga, either individually or in alleged combination, do not disclose or suggest the apparatuses and system of independent claims 1, 16 and 21. The independent claims are therefore submitted as being patentable. Moreover, it is submitted that the dependent claims are allowable at least because of their dependency on independent claims 1, 16 and 21, respectively, and for the additional features that they recite. Reconsideration is therefore requested.

Independent claims 1, 16 and 21 and dependent claims 2, 3, 8, 9, 11-15, 17, 20, 22-23, 25, 28 and 31 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatenable over claims 1-3 and 8-12 of U.S. Patent 6,544,485 (hereinafter “ ‘485 patent”). The rejections are respectfully traversed and reconsideration is requested.

On page 7 of the Office Action, the Examiner states that claims 1-3 and 8-12 of the ‘485 patent disclose or render obvious all the features of claims 1-3, 8, 9, 11-17, 20-23, 25, 28 and 31 in the instant application including that the second electrode array “comprises a plurality of concentrically disposed cylindrical electrodes.” The Examiner maintains on page 7 of the Office Action that the claims in the ‘485 patent are “narrower” than the claims of the instant application.

It is respectfully submitted that the ‘485 patent of an air-transporter-conditioner comprises a first and second array of electrodes with specified distal effective radii and does not render obvious the subject matter of claims 1-3, 8, 9, 11-17, 20-23, 25, 28 and 31 of the present application. Particularly, there is nothing in claims 1-3 and 8-12 of the ‘485 patent specifying “inner and outer generally tubular electrodes electrically connected to one another, with the inner electrode located at least partially within the outer electrode,” as claimed in independent claim 1. Similarly, there is no disclosure in claims 1-3 and 8-12 of the ‘485 patent specifying “inner and outer generally tubular electrodes electrically connected to one another, with the inner electrode located substantially within the outer electrode,” as claimed in independent claims 16 and 21.

As argued above, specifying that electrodes are “concentric” does not also imply that one electrode of the second electrode array lies within another electrode of the second electrode array, as claimed. It is respectfully submitted that the claimed feature that the electrodes of the second electrodes are located within each other, absent in claims 1-3 and 8-12 of the ‘485 patent

but claimed in independent claims 1, 16 and 21 of the instant application, recites different structure from that of the second electrode array and beyond that specified in the '485 patent claims. For at least these reasons, the '485 patent as cited by the Examiner does not render obvious the features of independent claims 1, 16 and 21 of the present application. Nor are the pending dependent claims rendered obvious by the '485 patent as cited by the Examiner at least because of their ultimate dependencies on the pending independent claims and for the additional features that they recite. Thus, reconsideration and withdrawal of the nonstatutory obviousness-type provisional double patenting rejections are requested.


For all of the above reasons, it is respectfully submitted that claims 1-33 are in condition for allowance and a Notice of Allowability is earnestly solicited.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact the Applicant's undersigned counsel at the telephone number, indicated below, to arrange for an interview to expedite the disposition of this application.

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Respectfully submitted,

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